vinyl acetate copolymers) are also disclosed as being useful in conjunction with a barrier layer wherein ethylene vinyl alcohol copolymer is exemplified as a barrier resin. Newsome, however, discloses a linear low density polyethylene which is chemically and physically distinct from the linear low density polyethylene taught in Applicants' claims. In fact, the linear low density polyethylenes described and taught in Newsome are produced by a process which gives polyethylenes which are markedly different from the polyethylenes produced by single site catalyst technology. Newsome's linear low density polyethylenes are produced using a Ziegler-Natta catalyst, not a single site catalyst/metallocene catalyst system.

Applicants submit that a Ziegler-Natta catalyst is not the same as or even similar to a single site catalyst or a metallocene catalyst system. A Ziegler-Natta catalyst has multiple reaction sites that may produce a polymer having varied comonomer distribution and a wide molecular weight distribution, thereby producing a polymer having a broad range of molecular sizes and compositions. Accordingly, this may limit the overall performance and design capabilities of resins formed from these catalysts, as compared to single site catalysts. However, single site catalysts, such as, for example, metallocene catalysts, are homogeneous catalysts that produce polymers having narrower molecular weight distributions, higher melt viscosities, and lower melt strengths than conventional Ziegler-Natta catalysts.

Ziegler-Natta catalysts typically use a transition metal halide complex, usually $TiCl_3$ or $TiCl_4$ along with an aluminum based co-catalyst, to produce polyolefins. Single site catalysts, such as metallocene catalysts, typically utilize a positively charged metal ion sandwiched between two negatively charged cyclopentadienyl anions. This configuration restricts the shape of the catalyst and typically will cause it to react with a comonomer at only a single site.

Newsome discloses a film structure wherein at least one of said layers comprises a blended LLDPE and wherein said LLDPE is prepared using a non-metallocene catalyst.

From column 2, lines 40 to column 3, line 22, Newsome discloses various embodiments of the invention. In all the embodiments taught, at least one layer of the film structure comprises a blend of non-metallocene LLDPE and EVA. Therefore in Newsome, a blended layer of non-metallocene LLDPE and EVA is required.

In contrast, Applicants' invention does not require that at least one layer comprise a blend of non-metallocene LLDPE and EVA. Also applicants' film structure is irradiated. Newsome does not teach or suggest irradiation of his film structure.

The Examiner has commented on Applicant's arguments regarding Newsome's teaching of a blend of non-metallocene LLDPE and EVA versus Applicants' layer comprising metallocene-LLDPE. It is the Examiner's position that the instant claim is recited broadly enough to include additional components, i.e., a blend. However, Applicants submit that even if Applicants' claim would include a blend, it would be a blend of a metallocene, LLDPE and another resin. Applicants' layer would not include a non-metallocene LLDPE. Therefore, the two layers (Newsome layer and Applicants' layer) would be completely different.

Therefore given the following distinctions between Newsome and Applicants' invention: Newsome teaches non-metallocene LLDPE; applicants teach metallocene ethylene alpha-olefin copolymer; Newsome requires that at least one layer of the film structure comprise a blend of non-metallocene LLDPE and EVA; applicants' invention does not require a blend of non-metallocene LLDPE and EVA; Newsome does not disclose an irradiated film structure; applicants film structure is irradiated; it is not seen how a reading of Newsome can make obvious Applicants' invention.

Lai discloses a class of linear olefin polymers having certain characteristics and improvements over conventional LLDPE such as the LLDPE taught by Newsome.

Lai further discloses a process of manufacturing said linear olefin polymers. Lai also discloses that these polymers are useful in a variety of areas such as fibers, films and molded parts. There is, however, no teaching or suggestion by Lai as to how, in a specific type of film structure (i.e., barrier films, non-barrier film, blended, non-blended film) these polymers would react or even how they could be useful within the context of any specific film structures. In addition, there is certainly no teaching in Lai or Newsome to combine the teachings to make the claimed invention.

The design of specific film structures involves the consideration of many factors. These factors can be exemplified by, but not limited to, processability of the individual layers or the entire film structure, hot tack, heat sealability, coefficient of friction, etc.

Lai neither teaches nor suggests how any of these factors would be addressed in the use of Lai's polymer within any specific film, structure, or class of film structure, let alone Applicants' specific film structure.

A disclosure of a monolayer film structure comprising solely the polymer of Lai does not address the factors discussed above. Because these factors change with the introduction of another resin (i.e., ethylene vinyl acetate copolymer) or with the introduction of a barrier layer (ethylene vinyl alcohol copolymer) in a film structure, there is no way of predicting whether the film structure having more than one component will be viable based on the knowledge derived from the Lai disclosure.

Applicants' invention as defined by claims 17, 18, 20 and 21 is to a specific film structure having a barrier layer with two opposing surfaces; wherein said barrier layer is disposed between said layers two and three; a fourth layer comprising ethylene vinyl acetate and a fifth layer comprising a polymer or copolymer formed by the polymerization reaction with a single site catalyst.

It is Applicants' position that the design of a viable film structure involves the consideration of many factors as indicated earlier. Without experimentation, there would be no way of predicting how any of the various factors, either singularly or in combination, could be affected by a change in a component of the film structure (i.e., substituting one LLDPE for another LLDPE). Therefore, given the chemical and physical differences between the LLDPE in Newsome and the LLDPE of Applicants' film structure, the lack of teaching or suggestion in Lai as to how its polymer would affect the various considerations discussed earlier for specific film structures or even in a class of specific film structure (i.e., barrier film, blended films, etc.) and the unpredictability as to the effect of altering the components of a specific film structure, it is not seen how these references either singularly or in combination can make obvious Applicants' invention.

Wilhoit discloses a heat-shrinkable film comprising a three component blend wherein said blend comprises a polyethylene member selected from the group consisting of VLDPE and LLDPE or a mixture thereof, ethylene alpha-olefin plastomer copolymer of density below 0.90 g/cm^3, and ethylene vinyl acetate copolymer. Therefore, in Wilhoit, whether the film is a monolayer or a multilayer, at least one layer must comprise the above-described blend.

Applicants' invention is to a five-layer film structure comprising a first-barrier layer, a second and third adhesive layer disposed on opposing surfaces of said first layer, a fourth layer of ethylene vinyl acetate copolymer, and a fifth layer of an ethylene alpha-olefin copolymer

formed by a single site catalyst process. Applicants' film structure is totally distinct from the teaching of Wilhoit because no such blend is present in Applicants' invention. Wilhoit's teaching of irradiating a film comprising the above-described blend does not make obvious irradiation of Applicant's film structure because Applicants film structure is distinct from that taught by Wilhoit. One can not predict that the irradiation of a given film structure will be successful based on the irradiation of a totally different structure.

Claims 17, 18, 20 and 21 are rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over Newsome (4,457,960) in view of Schut "Enter a New Generation of Polyolefins" Nov. 1991, Plastics Technology, or Van der Sanden "A New Family of Linear Ethylene Polymers With Enhanced Sealing Performance" February 1992, and further in view of Wilhoit (5,283,128).

The Newsome and Wilhoit references have been discussed above.

The Schut reference discloses polyethylenes made using different single-site catalysts. The Schut reference further discloses that these polyethylenes, depending on the process and single-site catalyst used can produce, polyethylenes having usefulness in many different applications. The Schut reference does not teach or suggest Applicants' multilayer, irradiated film having the Applicants' particular configuration.

The Van der Sanden reference discloses linear ethylene polymer having lower seal initiation temperatures, toughness and strength. There is no disclosures in Van der Sanden of the flow rate ratio of the single site catalyst polymers, nor of any favorable results that arise from the use of ethylene alpha-olefin copolymers formed from a polymerization reaction in the presence of a single-site catalyst having range of molecular weight distribution and flow rate ratio contained in the amended claims. Additionally, while Van der Sanden teaches the favorable property of narrow molecular weight distribution, it does not teach the particular range recited in the amended claims or the use of the ethylene alpha-olefin copolymer in Applicants particular film structure.

Applicants respectfully submit that the claims distinctly define the present invention from any of the art of record taken singly or in combination for the reasons that were presented above.

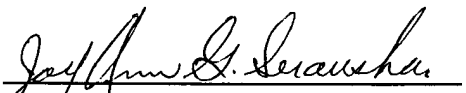
Claims 17, 18, 20 and 21 are provisionally rejected by the Examiner under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4-13, 15, 16 and 21 of copending Application No. 08/899,410.

With respect to the rejection of claims 17, 18, 20 and 21 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4-13, 15, 16 and 21 of copending Application no. 08/899,410, Applicants would be willing to consider submitting a Terminal Disclaimer to overcome this rejection after the remaining rejections have been withdrawn and upon receiving an indication of allowable subject matter.

In view of the foregoing remarks and amendments, Applicants respectfully submit that all of the claims in the application are in allowable form and that the application is now in condition for allowance.

Respectfully submitted,

Date: September 25, 2002

By: 

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